

Claims:

- 5 1. A process for producing marl slags and marl slag cements or mixed components for mixed cements from marl having a basicity CaO/SiO_2 of < 2.0 , characterized in that in a first process step argillaceous marl or a mixture of marl and clay having a basicity of < 2.0 is dried, preheated and calcined and that, after this, the obtained product in a second process step is melted in a separate melting furnace at higher temperatures than applied in the first process step and is granulated from the melt.
- 15 2. A process according to claim 1, characterized in that the first process step is realized in a suspension type heat exchanger, a rotary tubular kiln, a multiple-hearth furnace or a shaft furnace, or in a fluidized bed or cyclone preheating unit.
- 20 3. A process according to claim 1 or 2, characterized in that the second process step is carried out in a melting cyclone, a rotary tubular kiln or a hearth-type furnace, or in an iron melting oxidation reactor.
- 25 4. A process according to claim 1, 2 or 3, characterized in that the target slag is adjusted to a basicity CaO/SiO_2 of between 0.9 and 1.85 by mixing marl and clay.
- 30 5. A process according to any one of claims 1 to 4, characterized in that the melt at basicities of > 1.4 is sprayed into a granulator and, in particular, a vapor granulator.
- 35 6. A process according to any one of claims 1 to 5, characterized in that the first process step is carried out at temperatures of up to 950° to 1000°C , drying being effected at temperatures of from 100 to 210°C , preheating being effected

5453/10

at 210° to 600°C and calcining being effected at 600° to 1000°C.

7. A process according to any one of claims 1 to 6, characterized in that the second process step is carried out at temperatures of between 1450° and 1550°C.

8. A process according to any one of claims 1 to 7, characterized in that the first process step is realized with finely broken marl having a mean particle size ranging from 20mm to 30mm.

9. A process according to any one of claims 1 to 8, characterized in that by-pass dust from the production of clinker is added to the charging material.

10. A process according to any one of claims 1 to 9, characterized in that the MgO portion of the charging material is adjusted to below 19 wt.-%.

11. A process according to any one of claims 1 to 10, characterized in that spray granulation is effected using hydrocarbons as a coolant and that the synthesis gas formed is burned in the first process step.